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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/823,344	04/13/2004	Robert Lloyd Robinett	040148	4731

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EXAMINER	
TRAN, TUAN A	

ART UNIT	PAPER NUMBER
2618	

NOTIFICATION DATE	DELIVERY MODE
07/06/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/823,344	ROBINETT, ROBERT LLOYD	
	Examiner	Art Unit	
	Tuan A. Tran	2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 June 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claims 1-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Forrester (2003/0017833) in view of Yamakawa (6,985,712).

Regarding claims 1, 4-6, 9 and 18-19, Forrester discloses a wireless device (See fig. 5) comprising: a first section 240 coupled to a first antenna 110 (via antenna switch comprising diplexer 250 and duplexers 260, 270) and comprising a first transmit path and a first receive path for a first wireless system (dual-band wireless system i.e. cellular CDMA/FM) and further comprising a first transmit path and a first receive path for a second wireless system (single-band wireless system i.e. PCS) (See fig. 5 and page 4 [0032] to page 5 [0040]); a second section 160 coupled to a second antenna 120a and comprising a second receive path for the first wireless system (cellular CDMA/FM system) and a second receive path for the second wireless system (PCS system) (See fig. 5 and page 5 [0041-0043]), wherein the first and second receive paths for the first wireless system are for two frequency bands (cellular CDMA band is at approximately 800 MHz and USFM band, regulated by the FCC, extends from 87.9 MHz – 107.9 MHz), and wherein the first and second receive paths for the second wireless system are for a single frequency band (PCS band); and a radio frequency

(RF) unit coupled to the first and second sections and operable to perform signal conditioning for RF transmit signals for the first transmit paths for the first and second wireless systems and to further perform signal conditioning for RF received signals from the first and second receive paths for the first and second wireless system (See page 4 [0032] to page 5 [0043], page 5 [0045] to page 6[0046]). However, Forrester does not mention that the first wireless system is TDMA/GSM 900/1800 MHz (dual-band TDMA/GSM), the second wireless system is CDMA, and a single-pole-three-throw (SP3T) switch coupled to the first antenna, the first transmit/receive paths of the first wireless system, and the first transmit/receive paths of the second wireless system via a duplexer. Yamakawa suggests an antenna switch of a multi-band wireless device (See fig. 6) comprising a SP3T switch coupled to an antenna for switching between TDMA band (transmit/receive path of a TDMA band) and CDMA band (transmit/receive paths of a CDMA band) via a duplexer (See fig. 6 and col. 9 lines 28-45). Since Forrester does suggest the wireless device is operable on multiple modes such as CDMA, TDMA, PCS, and AMPS (See page 2 [0020]) and dual-band TDMA/GSM is a well known telecommunication mode; therefore, it would have been obvious to one skilled in the art to assign dual-band TDMA/GSM as the first wireless system and CDMA as the second wireless system as well as to use the antenna switch as suggested by Yamakawa for the advantage of expanding the capability of the device to various communications modes as well as providing a proper antenna switch to the wireless device in accordance with its operation modes.

Claims 22-27 are rejected for the same reasons as set forth in claims 1, 4-6, 9 and 18-19.

Claim 28 is rejected for the same reasons as set forth in claim 1, as method.

Regarding claims 2-3, Forrester & Yamakawa disclose as cited in claim 1. Forrester further discloses each transmit path comprises a power amplifier (PA) and each receive path comprises a filter and a low noise amplifier (LNA) (See fig. 5 and page 4 0032] to page 5 [0043]).

Regarding claim 7, Forrester & Yamakawa disclose as cited in claim 1. Forrester further discloses the first receive path for the second wireless system is compliant with performance requirement of the second wireless system, and wherein the second receive path for the second wireless system is non-compliant with at least one of performance requirements (See page 1 [0006-0007] and page 5 [0045]).

Regarding claim 8, Forrester & Yamakawa disclose as cited in claim 1. However Forrester does not mention that the second antenna is isolated from the first antenna by at least 22 decibels (dB). Since the technique of isolating side-by-side antennas by a certain amount of decibel (dB) is widely known in the art; therefore it would have been obvious to one skilled in the art to separate the first and second antenna by at least 22 dB for the advantage of accommodating with the designer's intention of reducing interference level to enhance the signal quality.

Regarding claims 10-12, Forrester & Yamakawa disclose as cited in claim 9. Forrester further discloses a radio frequency (RF) unit coupled to the first and second sections and operable to perform signal conditioning for RF transmit signals for the first

transmit paths for the first and second wireless systems and to further perform signal conditioning for RF received signals from the first and second receive paths for the first and second wireless system, wherein the RF unit is operable to perform modulation and frequency conversion utilizing direct-conversion on baseband transmit signals to obtain the RF transmit signals, and to perform demodulation and frequency conversion utilizing direct-conversion on the received RF signals to obtain baseband received signals (See page 4 [0032] to page 5 [0043], page 5 [0045] to page 6[0046]).

Regarding claims 13-17, Forrester & Yamakawa disclose as cited in claim 1. However, Forrester does not mention that the first section further comprises a second transmit path and a third receive path for the first wireless system and a second transmit path and a third receive path for the second wireless system, wherein the second section comprises a fourth receive path for the first wireless system and a fourth receive path for the second wireless system, wherein the first, second, third, and fourth receive path s for the first wireless system are for four frequency bands, and wherein the third and fourth receive paths for the second wireless system are for a second frequency band of the second wireless system. Since Forrester does suggest the wireless device is operable on multiple frequency bands at multiple communication modes (See page 2 [0020], page 4 [0034]); therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to add a second transmit path and a third receive path for the first wireless system and a second transmit path and a third receive path for the second wireless system in the first section as well as a fourth receive path for the first wireless system and a fourth receive path for the second wireless system in

the second section , wherein the first, second, third, and fourth receive paths for the first wireless system are for four frequency bands, and wherein the third and fourth receive paths for the second wireless system are for a second frequency band of the second wireless system for the advantage of expanding the capability of the device to various communications spectrums.

Regarding claims 20-21, Forrester & Yamakawa disclose as cited in claim 1. Forrester further discloses a third section coupled to the third antenna 120b and comprising a receive path for a satellite positioning system, wherein the satellite positioning system is Global Positioning System (GPS) (See fig. 5 and page 5 [0044]).

Response to Arguments

Applicant's arguments filed 06/20/2007 have been fully considered but they are not persuasive.

The applicant argued that neither the Forrester reference nor the Yamakawa reference, either individually or in any proper combination, teach or suggest applicant's claimed invention, specifically the Forrester reference teaches away the applicant's claimed invention by suggesting a single band limitation for each of a cellular band and a PCS band (See Remark, page 8-11). The examiner respectfully disagrees with the applicant's argument. In this instant case, the Forrester reference does disclose a wireless device (See fig. 5) comprising: a first section 240 coupled to a first antenna 110 (via antenna switch comprising diplexer 250 and duplexers 260, 270) and comprising a first transmit path and a first receive path for a first wireless system (**dual-band wireless system i.e. cellular CDMA band and FM band**) and further comprising a first

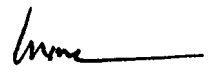
transmit path and a first receive path for a second wireless system (single-band wireless system i.e. PCS band) (See fig. 5 and page 4 [0032] to page 5 [0040]); a second section 160 coupled to a second antenna 120a and comprising a second receive path for the first wireless system (cellular CDMA/FM system) and a second receive path for the second wireless system (PCS system) (See fig. 5 and page 5 [0041-0043]), wherein the first and second receive paths for the first wireless system are for two frequency bands (**cellular CDMA band is at approximately 800 MHz and USFM band, regulated by the FCC, extends from 87.9 MHz – 107.9 MHz**), and wherein the first and second receive paths for the second wireless system are for a single frequency band (PCS band). Since Forrester does suggest the wireless device is operable on multiple modes such as CDMA, TDMA, PCS, and AMPS (See page 2 [0020]) and dual-band TDMA/GSM is a well known telecommunication mode (TDMA/GSM 900/1800 MHz) and Yamakawa suggests an antenna switch of a multi-band wireless device (See fig. 6) comprising a SP3T switch coupled to an antenna for switching between TDMA band (transmit/receive path of a TDMA band) and CDMA band (transmit/receive paths of a CDMA band) via a duplexer (See fig. 6 and col. 9 lines 28-45); therefore, it would have been obvious to one skilled in the art to assign dual-band TDMA/GSM as the first wireless system and CDMA as the second wireless system as well as to use the antenna switch as suggested by Yamakawa for the advantage of expanding the capability of the device to various communications modes as well as providing a proper antenna switch to the wireless device in accordance with its operation modes.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan A. Tran whose telephone number is (571) 272-7858. The examiner can normally be reached on Mon-Fri, 10:00AM-6:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Anderson can be reached on (571) 272-4177. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



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